Smart Guess & Test Papers

Student Name ________________ Father Name ________________ Roll Number ______

Class: 2nd /Year - Statistics Marks : _________ Exam Format : Monthly

Time : 1 Hour | Date _____________ Examiner Sig ________ Chapter#: 10, 11, 12, 13, 14, 15, 16, 17

MCQ's		S/Q		L/Q		Total	

Objective Type

1. Encircle the Correct Option.

1. درست جواب کے گرد دائرہ لگائیں۔

1) The area to the left of $(\mu + \sigma)$ for a normal distribution is approximately equal to :

a) 0.16	b) 0.34	c) 0.50	✔d) 0.84

2) A 95% confidence interval for population proportion p is 32.4% to 47.6% ,the value of sample proportion $\hat{p}$ is

✔a) 40%	b) 32.4%	c) 47.6%	d) 80%

3) PRIME 9755 is one of the example of :

✔a) Mini computers	b) Super computers	c) Microcomputers	d) Mainframe computers

4) In analyzing the results of an experiment involving seven paired samples. Tabulated t should be obtained for :

a) 13 degree of freedom	✔b) 6 degree of freedom	c) 12 degree of freedom	d) 14 degree of freedom

5) If the population standard deviation σ is known ,and the sample size is small i.e, n≤ 30 the confidence interval for the population mean μ is based on :

a) The poisson distribution	✔b) The t-distribution	c) The x^2 distribution	d) The normal distribution

6) In the regression equation always passes through :

a) (x,y)	b) (a,b)	c) (xy)	✔d) (x, y)

7) The mean and standard deviation of the standard normal distribution are respectively :

✔a) 0 and 1	b) μ and σ	c) μ and σ^2	d) 1 and 0

8) Increased demand for coolers in summer and heaters in winter is an example of :

a) Secular trend	b) Cyclical variation	✔c) Seasonal variations	d) Irregular variations

9) When two regression coefficient bears same algebraic signs, then correlation coefficient is :

a) Positive	b) Negative	✔c) According to two signs	d) Zero

10) Indicate which of the following is an example of seasonal variations :

a) death rate decreased to advance in science	✔b) the sale of air condition increases during summer	c) recovery in business	d) sudden causes by wars

11) The some of the difference between the actual values of Y and its obtained from the fitted regression line is always

✔a) Zero	b) Minimum	c) Maximum	d) Unknown

12) Super computer can process billions of instructions:

✔a) Per seconds	b) per microseconds	c) Per minute	d) Per hour

13) Logarithms are used to find the trend equation that is :

✔a) exponential	b) quadratic	c) parabolic	d) linear

14) Which of the following is not an arithmetic operation :

a) Addition	✔b) Greater than	c) Subtraction	d) Multiplication

15) the time period of third generation of computers is

✔a) 1965-70	b) 1980-onward	c) 1959-65	d) 1942-65

16) If X-N (100,64) ,then standard deviation σ is

a) 100	b) 64	✔c) 8	d) 100-64= 36

17) When crops badly damaged on account of rain is :

a) cyclical movement	✔b) random movement	c) secular trend	d) seasonal movement

18) The dependent variable is also called:

a) Regressand variable	b) Predictand variable	c) Explained variable	✔d) All of these

19) A student calculates a 90% confidence interval for population mean μ when population standard deviation σ is unknown and n=9 the confidence interval is -24.3 cents to 64.3 cents ,the sample mean $\underline{X}$ is :

a) 40	b) -24.3	c) 64.3	✔d) 20

20) A value calculated from the sample is called a :

✔a) Statistic	b) Mean	c) Parameter	d) Proportion

21) If r=-0.02 ,then correlation will be

✔a) Weak negative	b) High positive	c) High negative	d) None of proceeding

22) For a particular hypothesis test , α=0.05 and β=0.10.The power of the test is equal to :

a) 0.14	b) 0.90	✔c) 0.95	d) 0.25

23) A 95% confident interval for the mean of a population is such that :

a) It contains 95% of the values in the population	b) There is a 95% chance that it contain all the values in the population	✔c) There is a 95% chance that it contains the mean of the population	d) There is a 95% chance that it contains the standard deviation of the population.

24) The total area of the normal distribution probability function is equal to :

a) 0.5	✔b) 1	c) 0.25

25) The width of a confidence interval will be effected by :

a) The sample size	b) The population size	✔c) The amount of variation in the population	d) All of these

26) In the regression equation y=a+bx ,y is called:

a) Independent variable	✔b) Dependent variable	c) Continuous variables	d) None

27) If a hypothesis specifies the population distribution is called:

✔a) Simple hypothesis	b) Composite hypothesis	c) Alternative hypothesis	d) None of these

28) The central limit theorem says that as as the sample size increases ,the shape of the sampling distribution approaches a :

✔a) Normal distribution	b) Binomial distribution	c) Shape resembling the population that is being sampled	d) Shape that varies according to the parameter being estimated

29) Repetitive movements around the trend line in one year or less is :

a) Secular trend	✔b) Cyclical variation	c) Seasonal variations	d) Irregular variations

30) In fitting of a straight line , the value of slope remain unchanged by change of :

a) scale	✔b) origin	c) both origin and scale	d) none of them

31) The median of a normal distribution corresponds to a value of Z is :

✔a) 0	b) 1	c) 0.5	d) -0.5

32) Given μ_o =130 , X=150 , σ=25 and n=4 what test statistic is appropriate

a) t	✔b) z	c) x^2	d) F

33) An advancing agency wants to test the hypothesis that the proportion of adults in Pakistan who read a Sunday Magazine is 25 percent .The null hypothesis is that the proportion reading the Sunday magazine is .

a) Different from 25%	✔b) Equal to 25%	c) Less than 25%	d) More than 25%

34) Given a normal distribution with μ=100,σ=100,the area to the left of 100 is

a) one	✔b) equal to 0.5	c) less than 0.5	d) greater than 0.5

35) The probability of rejecting H_o when it is false is called:

a) Confidence coefficient	b) Level of confidence	c) Size of the test	✔d) Power of the test

36) A confidence level will be widened if :

✔a) The confidence level is increased and sample size is reduced	b) The confidence level is increased and the sample size is increased	c) The confidence level is decreased and the sample size is increased	d) The confidence level is decreased and the sample size is decreased

37) Long term variations are regarded as :

✔a) Secular trend	b) Cyclical variation	c) Seasonal variations	d) Irregular variations

38) In a normal curve ,the highest point on the curve occurs at the mean ,μ which is also the

a) lower and upper quartile	b) geometric mean and harmonic mean	✔c) median and mode	d) variance and standard deviation

39) The dispersion among sample means is less than the dispersion among the sampled items themselves because :

a) Each sample is smaller than the population from which it is drawn	b) Vary large values are averaged down and very small values are averaged up	c) The sample items are all drawn from the same population	✔d) None of these

40) If a normal distribution with μ =200 has P(x>225)=0.1587,then p(x<175) equal to

✔a) 0.1587	b) 0.8413	c) 0.3413	d) 0.5000

41) If a person ranks lowest on beauty and highest on intelligence and another ranks highest on beauty and lowest on intelligence .Spearman's coefficient of rank correlation is probably

a) zero	b) weak positive	c) perfect positive	✔d) perfect negative

42) What value for p should be used in the formula for the required sample size to estimate a population proportion when p is unknown

a) 1.00	b) 0.00	c) 0.05	✔d) Any number between 0 and 1

43) Compiler ans assembler are

✔a) Hardware components	b) Software components	c) Input and output components	d) None of these

44) Drag and drop is a term associated with :

✔a) Mouse	b) Keyboard	c) Printer	d) Scanner

45) Level of significance is also called:

a) Power of the test	✔b) Size of the test	c) Level of confidence	d) Confidence of coefficient

46) A range of value used to estimate an unknown population parameter is

a) A point estimator	✔b) An interval estimator	c) An unbiased estimator	d) A biased estimator

47) The graph represented the relationship that is :

a) Linear positive	✔b) Linear negative	c) Non-linear	d) Curve linear

48) In moving average method, we can not find the trend values of some

a) middle periods	b) end periods	c) starting periods	✔d) between extreme periods

49) Given a standardized normal distribution (with a mean of zero and standard deviation of one).P(z<variance) is equal to :

✔a) 0.8413	b) 0.3413	c) 0.1587	d) 0.5000

50) Given a random variables x which is normally distributed with a mean and variance both equal to 100.The value of mean deviation is approximately equal to :

a) 7	✔b) 8	c) 8.5	d) 9

51) In a normally distributed population ,the sampling distribution of the mean :

a) Is normally distributed	b) Has a mean equal to the population mean	c) Has a standard deviation equal to the population standard deviation divide by the square root of the sample size	✔d) All of these

52) The skewness and kurtosis of the normal distribution and respectively :

✔a) zero and zero	b) zero and one	c) one and zero	d) one and one

53) In a normal probability distribution of a continuous random variables, the value of standard deviation is :

a) Zero	b) Less than zero	✔c) Greater than zero	d) None of these

54) The value of chi-square statistic is always

a) negative	b) zero	✔c) non-negative	d) none

55) Microphone is a(an)

✔a) Input devise	b) Output device	c) Control unit	d) None of these

56) When b_{xy} is positive ,then b_{yx} will be

a) Negative	✔b) Positive	c) Zero	d) One

57) A binary digit is commonly called

✔a) Bit	b) Byte	c) Kilobyte	d) Gigabyte

58) In the two-sample problem ,if samples of sizes n_1 and n_2 are independent ,then the number of degrees of freedom is

a) n-1	b) n	c) 2n-1	✔d) 2n-2

59) A normally distributed population has known standard deviation of 1.0. The total of a 95% confidence interval for the population mean is

a) 1,96	b) 3.92	✔c) 1.645	d) Cannot be determined from given information

60) The diameter of a compact disk is :

✔a) 4.75 inches	b) 4.85 inches	c) 4.65 inches	d) 4.55 inches

61) Which of the following situations will cause a decrease in the size of the confidence interval

a) An increase in the confidence level	✔b) An increase in the sample size	c) An infinite population size	d) More than one of the above

62) A two sample t test where n_1=10 and n_2=10 has

a) 9 degree of freedom	✔b) 18 degree of freedom	c) 19 degree of freedom	d) 20 degree of freedom

63) The electronic and mechanical components of a computer are known as

a) Computer software	✔b) Computer hardware	c) None of above	d) Both a and b

64) If X is a normal random variable with mean μ=50 and standard deviation σ=7,if Y=X-7 then standard of Y is

✔a) 7	b) 14	c) 49

65) The normal curve is symmetrical and for symmetrical distribution ,the value of all odd order moment about mean will always be :

a) 1	b) 0.5	c) 0.25

66) A statistic used to estimate a population parameter is a

✔a) Point estimator	b) Point estimate	c) Interval estimator	d) Interval estimates

67) FORTRAN and BASIC are

a) Lo level languages	✔b) High level languages	c) Machine languages	d) None of these

68) If Y=5X +10 and X is N(10,25) then mean of Y is :

a) 50	✔b) 60	c) 70	d) 135

69) The characteristics movements of a time series are classified into :

a) Three components	b) Two components	✔c) Four components	d) Five components

70) The graph of time series is called

a) histogram	b) straight line	✔c) historigram	d) ogive

71) In converting the scores 8,20,14,7,11,14,3 to ranks the score of 14 has a corresponding rank of :

a) 5	b) 6	✔c) 5.5	d) 4.5

72) For an r x c contingency table the number of degree of freedom equals:

a) rc	b) r + c	c) (r-1) + (c-1)	✔d) (r-1) (c-1)

73) A business cycle has :

a) One phase	✔b) Two phase	c) Three phase	d) Four phase

74) A sample of 100 customers of a particular discount store gives an average purchase of 9.21.The standard deviation is 1.20 .The estimated value f the standard deviation of the distribution of sample means is

✔a) 0.120	b) 0.012	c) 1.20	d) Unknown

75) Interpreter is a type of

✔a) Language processor	b) Application software	c) Storage device	d) Computer hardware

76) The showing the period points (x,y) is called a :

✔a) Scattered diagram	b) Histogram	c) Pie diagram	d) Histogram

77) For α=0.05 ,the critical value of $Z_{0.01}$ is equal to

a) 1.96	✔b) 2.33	c) 1.28	d) 2.58

78) A trend is the better fitted trend for which the sum of squares of residuals is

a) maximum	✔b) minimum	c) positive	d) negative

79) Fire a factory is an example of

a) Secular trend	b) Cyclical variation	c) Seasonal variations	✔d) Irregular variations

80) Thermometers and barometers are

✔a) Analogue devices	b) Digital devices	c) Communication devices	d) None of these

81) The data in the population are divided into groups making the values within each group as different as possible ,such that each group is similar to the population as a whole .This sampling technique is :

a) Simple random sampling	b) Systematic sampling	✔c) Stratified sampling	d) Cluster sampling

82) Printer is a :

a) Software	✔b) Hard copy	c) Soft copy	d) Hardware

83) The sampling distribution of the mean can be assumed to be normally distributed when :

a) $n \geq 10$	✔b) $n \geq 30$	c) $n \geq 50$	d) $n \geq 100$

84) A sampling distribution is a probability distribution for a :

a) Sample mean	b) Sample proportion	c) Sample	✔d) Sample statistics

85) The era of prosperity is an example of:

a) Secular trend	✔b) Cyclical variation	c) Seasonal variations	d) Irregular variations

86) If the population standard deviation σ is known ,the confidence interval for the population mean μ is based on

a) The poisson distribution	b) The t-distribution	c) The x^2 distribution	✔d) The normal distribution

87) If the observations are paired and the number of pairs is n,then the number of degree of freedom is equal to

a) n	✔b) n-1	c) 2n	d) 2n-1

88) Before 1952 ,the only available programming language was :

✔a) Machine languages	b) Assembly languages	c) C languages	d) None of these

89) If X is N (10,5), the fourth central moment is

a) 65	✔b) 75	c) 85	d) 100

90) The choice of one tailed test and two-tailed test depends upon :

a) Null hypothesis	✔b) Alternative hypothesis	c) Composite hypothesis	d) None of these

91) To determine the trend in a time ,one needs data that are :

a) weekly	b) monthly	✔c) yearly	d) quarterly

92) A border patrol check point that stops every tenth van is using :

a) Simple random sampling	b) Systematic sampling	✔c) Stratified sampling	d) Complete enumeration

93) If α=0.10 and n =15; $t_1=\alpha/2$ equals :

✔a) 1.761	b) 1.753	c) 1.771	d) 2.145

94) Damages due to floods ,drought strikes fires and political disturbances is :

a) trend	b) seasonal	c) cyclical	✔d) irregualr

95) Function keypad consist of

✔a) 12 keys	b) 6 keys	c) 8 keys	d) 14 keys

96) The single number used to estimate an unknown population parameter is :

✔a) A point estimator	b) An interval estimator	c) An unbiased estimator	d) A biased estimator

97) Moving -averages

✔a) give the trend in a straight line	b) measure the seasonal variations	c) smooth-out the time series	d) none of these

98) One byte equals

✔a) 8 bits	b) 4 bits	c) 6 bits	d) 12 bits

99) In performing the test of hypothesis ,the first step consists of :

✔a) Stating the null and alternative hypothesis	b) Determining the sample size to be taken	c) Specifying the sampling distribution of the appropriate statistics	d) Selecting the level of significance

100) When computing the standard error of the mean and the standard deviation of the population ,the standard error is always

a) Equal to the standard deviation	✔b) Smaller	c) Larger	d) Either smaller or larger depending on the data

101) 1-α is also called:

a) Power of the test	✔b) Confidence coefficient	c) Level of significance	d) Size of the test

102) The purpose of statistical inference is :

a) To collect sample data and use them to formulate hypothesis about a population	b) To draw conclusion about populations and then collect sample data to support the conclusions	✔c) To draw conclusion about population from sample data	d) To draw conclusion about the know value of population parameter

103) Increases in the number of patients in the hospital due to heat stroke is :

a) secular trend	b) irregular variations	✔c) seasonal variations	d) cyclical variations

104) The average height of 25 students of a college is known to be 66 inches .In constructing a 95 percent confidence interval for the average height of all the students of the college ,we would use

a) The normal distribution with 24 degrees of freedom	b) The t distribution with 24 degrees of freedom	c) The t distribution with 65 degree of freedom	d) The t distribution with 25 degree of freedom

105) The shape of the chi-square distribution depends upon :

a) Parameters	✔b) Degrees of freedom	c) Number of cells	d) Standard deviation

106) If r is negative ,then there is

a) No correlation	b) High positive	c) High negative	✔d) None of proceeding

107) Increased demand of admission in the subject of computer in Pakistan is :

✔a) secular trend	b) cyclical trend	c) seasonal trend	d) irregular trend

108) If two attributes A and B have perfect positive association ,the value of coefficient of association is equal to

✔a) +1	b) -1	c) (r-1) (c-1)

109) The central limit theorem assures us that the sampling distribution of the mean

a) Is always normal	b) Is always normal for large sample size	✔c) Approaches normality as sample size increases	d) Appears normal only when N is greater than 1000

110) Which of the following is the method of selecting samples from a population .

a) Judgement sampling	b) Random sampling	c) Probability sampling	✔d) All of these

111) The best fitting trend is one in which the sum of squares of residuals is :

a) negative	✔b) least	c) zero	d) maximum

112) An example in a two-sided alternative hypothesis is :

a) H_1 :μ ? 0	✔b) H_1 :$\mu \neq 0$	c) H_1 :$\mu > 0$	d) H_1 :$\mu < 0$

113) The first commercially available computer was :

✔a) UNIVAC	b) ENIAC	c) Mark I	d) Analytical engine

114) In a normal distribution mean is 100 and standard deviation is 10.The values of points of inflection are :

a) 100 and 110	b) 80 and 120	✔c) 90 and 110	d) None of these

115) Which of the following is not considered a probability sample

a) simple random sample	b) systematic sample	✔c) quota sample	d) cluster sample

116) The shape of the normal curve depends upon the value of :

✔a) standard deviation	b) Q_1	c) Mean deviation	d) quartile deviation

117) Which of the following is not a component of time series :

a) Trend	✔b) Repetitive	c) Seasonal	d) Irregular

118) First generation computer utilized

✔a) Vacuum tubes	b) Transistors	c) IC's	d) None of above

119) A hypothesis that is specifies all the values of parameter is called:

✔a) Simple hypothesis	b) Composite hypothesis	c) Statistical hypothesis	d) None of these

120) For a particular hypothesis test a-0.05 and b =0.10 .The power of the test is equal to :

a) 0.14	✔b) 0.90	c) 0.95	d) 0.25

121) It is possible that two regression coefficient have :

a) Opposite signs	✔b) Same signs	c) No signs	d) Difficult to tell

122) The t-distribution should be used to test for a difference between mean when

✔a) Either n_1 and n_2 is less than 30	b) Both population are normally distribution	c) The population variance are equal	d) All of the above are true

123) For α=0.05 ,the critical value of $Z_{0.05}$ is equal to

✔a) 1.96	b) 2.33	c) 1.28	d) 2.58

124) Moving average method is used for measurement of trend when :

✔a) trend is linear	b) trend is non linear	c) trend is curvilinear	d) none of these

125) The significance level is the risk of :

a) Accepting H_o when H_1 is correct	b) Rejecting H1 when H_1 is correct	c) Rejecting H_o when H_1 is correct	✔d) Rejecting H_o when Ho is correct

126) Accepting a null hypothesis H_o :

a) Proves that H_o is true	b) Proves that H_o is false	✔c) Implies that H_o is likely to be true	d) Proves that $\mu \leq 0$

127) In normal distribution whose mean is μ and standard deviation σ ,the value of quartile deviation is approximately

✔a) 2/3 σ	b) 4/5σ	c) 4/5	d) 2/3

128) Given H_o : μ_o H_1 : μ= μ_o , α=0.05 and we reject H_o: the absolute value of the Z-statistic must have equaled or been beyond what value

a) 1.96	b) 1.65	✔c) 2.58	d) 2.33

129) In a normal distribution ,the lower and upper quartiles are equidistant from the mean and are at a distance of :

a) 0.7979	b) 0.7979 σ	c) 0.6745	✔d) 0.6745 σ

130) A normal distribution has the mean μ=200. If 70 percent of the area under the curve lies to the left of 220,the area to the right of 220 is :

✔a) 0.3	b) 0.5	c) 0.2	d) 0.7

131) In the regression equation y=a+bx ,a is called:

a) x-intercept	✔b) y-intercept	c) Dependent variable	d) None

132) Any hypothesis which is tested for the purpose of rejection under assumption that is true is called:

✔a) Null hypothesis	b) Alternative hypothesis	c) Statistical hypothesis	d) Simple hypothesis

133) In the regression equation y=a+bx is called:

a) x-intercept	✔b) y-intercept	c) Dependent variable	d) None

134) If X is a normal variate with mean 20 and variance 16.the respective values β_1 and β_2 are

a) 0 and 3	b) 3 and 1	✔c) 0.5 and 1	d) 3 and 3

135) The value of π is approximately equal to :

a) 3.4146	✔b) 3.1416	c) 3.1614	d) 3.6416

136) To determine the height of a person when his weight is given is :

a) Correlation problem	b) Association correlation	✔c) Regression problem	d) Qualitative problem

137) The most commonly used mathematical method for measuring the trend is

a) moving averages method	b) semi average method	✔c) method of least squares	d) none of them

138) The standard error of the mean is :

a) An error in the calculation of the arithmetic mean	b) The arithmetic mean of the sampling distribution	c) No existent for certain distribution	✔d) The standard deviations of the sampling distribution of the mean

139) C++ is an example of

✔a) High level language	b) Low level language	c) Assembly language	d) None of these

140) Semi-averages method is used for measurement of trend when :

✔a) trend is linear	b) observed data contains yearly values	c) the given series contains odd number of values	d) none of them

141) If two attributes A and B are independent ,than the coefficient of association is

a) -1	b) +1	c) 0.5

142) A statistician calculates a 95% confidence interval for μ when σ is known .The confidence interval is rs.18000 to Rs.22000,the amount of the sample mean X is

a) Rs. 18000	✔b) Rs. 20000	c) Rs. 22000	d) Rs. 40000

143) A rule or formula that provides a basis for testing a null hypothesis is called:

a) None	✔b) Test-statistic	c) Population statistic	d) Both of these

144) If x is a normal variate with mean 50 and standard deviation 3 .The value of quartile deviation to approximately equal to :

a) 1	b) 1.5	✔c) 2	d) 2.5

145) In a normal curve ,the ordinance is highest at :

✔a) mean	b) variance	c) standard deviation	d) Q_1

146) The value of e is approximately equal to

✔a) 2.7184	b) 2.1783	c) 2.8173	d) 3.1416

147) Depression in business is :

a) secular trend	✔b) cyclical	c) seasonal	d) irregular

148) A correctly coefficient of =1.0 indicates that the correlation between a and y variables is :

a) Incorrectly computed	b) Vary poor	✔c) Perfect	d) Nonlinear

149) When the trend is of exponential type ,the morning average are to be computed by using

a) arithmetic mean	✔b) geometric mean	c) harmonic mean	d) weighted mean

150) In time series seasonal variations can occur within a period of

a) four years	b) three years	✔c) one year	d) nine years

151) The hypothesis is $\mu \leq 10$ is a

a) Statistical hypothesis	✔b) Composite hypothesis	c) Simple hypothesis	d) None of these

152) The independent variable in a regression line is :

✔a) Non-random variable	b) Random variable	c) Qualitative variables	d) None

153) Which of the following statements best describes the meaning of a 95 percent confidence interval for the population mean :

✔a) The probability is 0.95 that the population mean falls within the interval	b) There is a 0.95 chance that the sample mean equals the population mean	c) If additional samples of the same size are taken and a 95 percent confidence interval established for each ,we should except to bracket the true mean 95 percent of the time	d) The probability vis 0.95 that the sample mean is accurate

154) Electronic calculator and digital watches are :

a) Analogue devices	✔b) Digital devices	c) Communication devices	d) None of these

155) A random variables has a normal distribution with the mean μ=400.If 80 percent of the area under the curve lies to the left of 500,the area between 400 and 500 is :

a) 0.5	b) 0.2	✔c) 0.3	d) zero

156) For a 3x3 contingency table , the number of cells in the table are :

a) 3	b) 6	✔c) 9	d) 4

157) Any statement whose validity is tested on the basis of a sample is called:

a) Null hypothesis	b) Alternative hypothesis	✔c) Statistical hypothesis	d) Simple hypothesis

158) The alternative hypothesis is also called

a) Null hypothesis	✔b) Research hypothesis	c) Statistical hypothesis	d) Simple hypothesis

159) In a standard normal distribution ,the area to the left of z=1 is :

a) 0.6413	b) 0.7413	✔c) 0.8413	d) 0.3413

160) To estimate the total number of successes in the population ,which of the following must be known :

a) The sample size ,n	✔b) The number of successes in the sample ,x	c) The population size ,N	d) All of above

161) A sample of size n is called a small sample if n is

a) less than 30	b) greater than or equal to 30	c) equal to 30	✔d) less than or equal to 30

162) The degree of freedom for x^2 are (r-1) (c-1) for a contingency table with rows and c-columns .So for a 2 x 2 contingency table there are

✔a) One degree of freedom	b) Two degree of freedom	c) Three degree of freedom	d) four degree of freedom

163) To calculate the level of association ,we can calculate coefficient of association ,the coefficient of association always lies between

✔a) -1 to +1	b) 0 and 1	c) -1 and 0	d) 0 and 5

164) The general pattern of increase or decreased in economic or social phenomena is shown by :

a) seasonal trend	b) cyclical trend	✔c) secular trend	d) irregular trend

165) A time series of annual data can contain which of the following components :

a) Secular trend	b) Cyclical fluctuations	✔c) Seasonal variations	d) Both a and b

166) In a normal curve $\mu \pm 0.6745\,\sigma$ covers:

✔a) 50% area	b) 68.27% area	c) 95.45% area	d) 99.73% area

167) The parameter of the normal distribution are :

a) μ and σ^2	✔b) μ and σ	c) np and nq	d) n and p

168) The 3 1/2 inches diskette can store data of size :

✔a) 1.44 MB	b) 1.2MB	c) 2.1MB	d) 1.54MB

169) In order to carry out a x^2 test in a contingency table ,the observed values in the table should be

a) close to the expected values	b) all greater than or equal to 5	✔c) frequencies	d) quantitative

170) When variability between subgroups in a population is large , then the most advantageous method of sampling is :

a) simple random sample	b) systematic sample	✔c) stratified sample	d) cluster sample

171) In testing independent in a 2x3 contingency table, the number of degrees of freedom in x^2 distribution is :

a) 1	✔b) 2	c) 3	d) 5

172) If the figure +1 signifies a perfect positive correlation and the figure -1 signifies a perfect negative correlation ,then the figure 0 signifies

a) A perfect correlation	✔b) Uncorrelated variables	c) Not significant	d) Weak correlation

173) When regression line passes through the origin ,then

✔a) Intercept is zero	b) Regression coefficient is zero	c) Correlation is zero	d) Association is zero

174) In random sampling ,we can describe mathematically how objective our estimates are because :

a) Any population element has the known chance f being included in the sample	b) Every sample has always an equal chance of being selected	c) All the samples are of exactly the same size and can be accounted	✔d) Both a and b but not c

175) If H_0 is true and we reject H_0 it is called

✔a) Type I error	b) Type II error	c) Standard error	d) Sampling error

176) Standard error of the mean is the standard deviation of the :

a) Population	b) Sample	✔c) Sampling distribution of means	d) None of these

177) The fire in a factory as an example of :

a) secular trend	✔b) seasonal movements	c) cyclical	d) irregular variations

178) Joystick is an example of

✔a) Input devices	b) Output devices	c) Processing devices	d) Storage devices

179) 1-α is the probability associated with :

a) Type I error	b) Type II error	✔c) Level of confidence	d) Level of significance

180) Programme design is made up of two phases ,including:

✔a) Function design and first level of refinement	b) Function design and programme writing	c) Testing and debugging	d) Documentation and implementation

181) When taking simple random samples of size 3 without replacement from a population of 5 elements ,the number of possible samples is

a) 3	✔b) 10	c) 20	d) 60

182) The probability distribution of a statistic is called the

a) Frequency distribution of statistics	✔b) Sampling distribution of a statistic	c) Sampling of statistic	d) Population distribution of a statistic

183) All the arithmetic and logical data manipulation is done by the :

a) Hard disk	✔b) Arithmetic logic unit	c) Control unit	d) Main memory

184) Choose the pair of symbols that best completes this sentence .______________ is a parameter ,where as ___________________ is statistic .

a) N, μ	b) N,n	✔c) σ, S	d) n,σ

185) The purpose of simple linear regression analysis is to :

✔a) Predict one variable from another	b) Replace point on a scatter diagram by a straight line	c) Measure the degree to which two variables are linearly associated	d) None of these

186) The probability associated with committing type I error is

a) β	✔b) α	c) 1-β	d) 1-α

187) Suppose that a population with N=144 has mean μ=24.What is the mean of the sampling distribution of the mean for samples of sizes n =25.

✔a) 24	b) 2	c) 4.8	d) 25

188) The independent variable is also called:

✔a) Regressor	b) Regressand	c) Predictand	d) Eastimated

189) A random variable X is normal distributed with μ=70 and σ^2=25. The third moment about arithmetic mean is :

✔a) zero	b) less than zero	c) greater than zero	d) none of these

190) The purpose of smoothing is to :

✔a) define the trend	b) isolate cyclical effects	c) remove the effect to irregular variation	d) accomplish none of the above

191) The correlation coefficient is the ____________ of two regression coefficient :

a) Arithmetic mean	b) Median	✔c) Geometric mean	d) Mode

192) The secondary storage is also known as :

a) Long term storage	b) Backup storage	c) None of these	✔d) Both a and b

193) Processor ,in general are referred to as :

✔a) Software	b) Hardware	c) Floppy disk	d) Hard disk

194) Confidence coefficient or level of confidence is denoted by :

a) 1-β	✔b) 1-α	c) α	d) β

195) The analytical engine was invented in

a) 1730s	✔b) 1830s	c) 1930s	d) 1935

196) An orderly set of data arranged in accordance with their time of occurrence is called

a) arithmetic series	b) harmonic series	c) geometric series	✔d) time series

197) A value calculated from the population is called a:

a) Statistic	b) Mean	✔c) Parameter	d) Proportion

198) The semi-inter quartile rage for a standard normal random variables z is :

✔a) 0.6754	b) 0.6745 σ	c) 0.7979	d) 0.7979 σ

199) A decline in death rate due to advance in science is an example of

✔a) Secular trend	b) Cyclical variation	c) Seasonal variations	d) Irregular variations

200) In normal probability distribution for a continuous random variables ,the value of mean deviation is approximately :

a) 2/3	b) 2/3 σ	c) 4/5	✔d) 4/5 σ

201) The value of second moment about the mean in a normal distribution is 5.The fourth moment about the mean in the distribution is :

a) 5	b) 15	c) 25	✔d) 75

202) The normal probability distribution with mean 'np' and variance 'npq' ,ay be used to approximate the binomial distribution if n >50 and both np and nq are

✔a) greater than 5	b) less than 5	c) equal to 5	d) difficult to tell

203) For the standard normal distribution ,P(z>mean) is :

a) more than 0.5	b) less than 0.5	✔c) equal to 0.5	d) difficult to tell

204) The dependent variable is also called:

a) Regressor	✔b) Regressand	c) Predictand	d) Eastimated

205) The general purpose computers are also known as :

a) Hybrid computers	✔b) Digital computers	c) Analogue computers	d) Super computers

206) Regression of coefficient is independent of:

a) Units of measurement	b) Scale and origin	✔c) Both a and b	d) None of these

207) For a normal distribution with μ=10, σ=2,the probability of a value greater than 10 is

a) 0.1915	b) 0.3085	c) 0.6915	✔d) 0.5000

208) Decomposition of time series is called:

a) historigram	b) analysis of time series	c) histogram	✔d) detrending

209) The normal distribution is a proper probability distribution of a continuous random variable ,the total area under the curve f(x) is :

✔a) equal to one	b) less than one	c) more than one	d) between -1 and 1

210) If the population standard deviation σ doubles,the width of the confidence interval for the population mean μ will be

✔a) doubled	b) multiple of 2	c) divided by 2	d) decreased

211) The critical value for t for one-tailed hypothesis with α=0.05 is equivalent

a) Z oen tailed , α-0.05	b) T, two tailed ,α=0.025	✔c) T,two tailed, α=0.10	d) Z,one tailed ,α=0.025

212) The x^2-test should not be used if any expected frequency is

a) less than 10	✔b) less than 5	c) equal to 5	d) more than 5

213) A point estimated is unbiased of :

✔a) The expected value of the statistic equals the parameter	b) The variance of the estimator is smaller than the variance than the variance for any other estimator	c) The statistic equals the parameter	d) The statistic approaches the parameter as the sample size increases

214) The long term trend of a time series graph appears to be

a) straight -line	b) upward	c) downward	✔d) parabolic curve or third degree curve

215) In testing hypothesis $\alpha+\beta$ is always equal to

a) One	b) Zero	c) Two	✔d) Difficult to tell

216) The normal distribution can be used to construct confidence intervals for proportions when

a) n is large ($n \geq 50$)	✔b) $n\pi$ is greater than 5	c) $n(1-\pi)$ is greater than 5	d) All of above are true

217) If a large geographical area is to be sampled the most advantage sampling method to use is a :

a) Simple random sample	✔b) Systematic sample	c) Stratified sample	d) Cluster sample

218) The perfect positive correlation is signified by

a) -1	✔b) +1	c) -1 to +1

219) When comparing a 95 percent confidence interval for a mean with a 90 percent confidence interval for the same mean:

a) The former will be larger than the latter	b) The latter will be larger than the former	✔c) They will be of equal size	d) Their relatives can vary

220) A border patrol check point that stops passenger van is using :

a) Simple random sampling	b) Systematic sample	c) Stratified sampling	✔d) Complete enumeration

221) If all the actual and estimated values of Y are same on the regression line,the sum of square of error will be

✔a) Zero	b) Minimum	c) Maximum	d) Unknown

222) We can use the normal distribution to represent the sampling distribution of mean when the sample n is

a) more than 10	b) less than 50	✔c) more than 5	d) none of these

223) Supppose that , for a certain population σ_x is calculated as 20 when samples of size 25 are taken. What must be the value of σ for this infinite population :

a) 1000	✔b) 100	c) 500	d) 4

224) In an umpaired samples t-test sample sizes n_1=11 and n_2 =the value of tabulated t should be obtained for :

a) 10 degree of freedom	b) 21 degree of freedom	c) 22 degree of freedom	✔d) 20 degree of freedom

225) If an annual time series consisting of an even number of years is coded ,then each coded interval is equal to :

a) One year	✔b) Half year	c) Two year	d) None of these

226) If the magnitude of calculate value of t is less than the tabulated value of t , and H_1 is two sided ,we should

a) Reject H_o	b) Accept H_1	✔c) Not reject H_o	d) Difficult to tell

227) The most convenient sample to take when a complete listing of the population is available is a :

a) Simple random sampling	b) Systematic sampling	✔c) Stratified sampling	d) Cluster sampling

228) In a standard normal distribution ,the value of mode is

✔a) equal to zero	b) less than zero	c) greater than zero	d) exactly one

229) The infinite population correction should generally be used when :

a) The population is finite	b) The sample in large and the population is small	✔c) The sample is small and the population is large	d) Either a or b above are true